

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-9. (Canceled)
10. (New) A domestic oven comprising:
 - an oven compartment for receiving food;
 - a heating element to heat the oven compartment for cooking food;
 - a gas sensor in fluid communication with the oven compartment and outputting a signal indicative of the gases emitted by food being cooked in the oven compartment;
 - a central processing unit operably coupled to and controlling the heating element;
 - a user interface operably coupled with the central processing unit such that a user can set the type of food placed in the oven compartment and set the desired degree of cooking of the food;

wherein the central processing unit is configured to receive and filter the signal from the gas sensor, with an amplitude of filtering depending on the type of food set by the user, to determine a cooking time of the food and to control the operation of the heating element as a function of the determined cooking time and at least one of the type of food and the desired degree of cooking set by the user.
11. (New) The domestic oven of claim 10 wherein the central processing unit is further configured to determine the cooking time as a function of the signal received from the gas sensor, a temperature of the oven compartment and a control algorithm for the oven.
12. (New) The domestic oven of claim 10 wherein the central processing unit is further configured to determine a gradient of the signal, and wherein the determined gradient is compared with predetermined values stored in the central processing unit for determining the cooking time.

13. (New) The domestic oven of claim 10 further comprising a duct fluidly coupled with the oven compartment and wherein the gas sensor is located inside the duct.

14. (New) A method for automatic cooking in a domestic oven having an oven compartment for receiving food and a heating element to heat the oven compartment to cook the food in the oven compartment, the method comprising:

receiving as input from a user interface a setting of a food type of the food in the oven compartment;

receiving a signal from a gas sensor indicative of gas emitted by the food being cooked in the oven compartment;

processing the signal from the gas sensor according to a function of the type:

$$F(t) = \frac{(t_a - t_b)^\alpha}{(Y_a - Y_b)^\beta}$$

where Y_a and Y_b are values indicative of the signal from the gas sensor at a time t_a and t_b , respectively, and α and β are coefficients obtained experimentally for the set food type;

determining a gradient of the function $F(t)$; and

determining a cooking time of the food as a function of the determined gradient of the function $F(t)$.

15. (New) The method of claim 14 further comprising modifying the cooking time as a function of a degree of cooking of the food set by a user.